WHAT IS CLAIMED IS:

1.   A transmitter for an asymmetric digital subscriber line (ADSL) modem that can be coupled to a receiver over a local loop, comprising:

a pseudo-random bit sequence generator that outputs an output pseudo-random bit sequence (PRBS); and

a Medley signal generator that receives the output PRBS and generates a Medley signal based on the output PRBS;

wherein said pseudo-random bit sequence generator operates in at least one of the following modes: a parameter selection mode, a scramble mode, and a combination mode.

2.   The transmitter of claim 1, wherein the ADSL modem includes multiple channels, and said Medley signal generator includes a Medley tone encoder that modulates four-quadrature amplitude modulated (4QAM) symbols based on the received output PRBS to generate a set of tones for the multiple channels.

3.   The transmitter of claim 1, wherein said pseudo-random bit sequence generator operates in the parameter selection mode, and includes a controller coupled to a bit sequence module; said controller passing selected parameter data to said bit sequence module, and said selected parameter data including at least one of a selected initial state and selected polynomial that defines processing of bits in said bit sequence module to generate the output pseudo-random bit sequence.

4.   The transmitter of claim 3, wherein said bit sequence module includes a series of unit delay elements and a summation unit, and

wherein values of said unit delay elements are set based on selected initial state parameter data.

5.   The transmitter of claim 3, wherein said bit sequence module includes a series of unit delay elements and a summation unit, and

wherein outputs of at least two of said unit delay elements are coupled to said summation unit according to a selected polynomial, and said summation unit sums the coupled outputs to obtain the output pseudo-random bit sequence.

6.   The transmitter of claim 3, wherein said controller selects said selected parameter data based on an association with a reasonable peak-to-average (PAR) ratio for a sequence of Medley symbols.

7.   The transmitter of claim 3, further comprising a memory that stores a table that includes data in associated fields, said fields including Maximum PAR ratio for a sequence of Medley symbols, initial state, and transmit signal parameters of the ADSL modem.

8.   The transmitter of claim 1, wherein said pseudo-random bit sequence generator operates in the scramble mode, and includes a scrambler that receives an input periodic bit sequence and scrambles the input periodic bit sequence to obtain the output pseudo-random bit sequence.

9.   The transmitter of claim 8, wherein said scrambler comprises an ITU G.992.3 Medley scrambler.

10.   The transmitter of claim 8, wherein said input periodic bit sequence comprises bits output by an ITU G.992.1 PRBS generator.

11.   The transmitter of claim 8, wherein said scrambler comprises a series of unit delay elements having values according to an initial state and first and second summation units, wherein outputs of at least two of said unit delay

elements are coupled to said second summation unit according to an initial polynomial, and said second summation unit sums the coupled outputs and outputs a first sum signal to said first summation unit which performs a sum of the first sum and the input periodic bit sequence to obtain the output pseudo-random bit sequence.

12.   The transmitter of claim 1, wherein said pseudo-random bit sequence generator operates in the combination mode, and includes a controller coupled to a bit sequence module and a scrambler; wherein said controller selects either of the bit sequence module and the scrambler.

13.   The transmitter of claim 1, wherein said transmitter transmits selected parameter data to the receiver.

14.   A method, comprising:

selecting parameter data based on an association of the selected parameter data with a reasonable peak-to-average (PAR) ratio for a sequence of Medley symbols according to at least one transmit signal parameter of an ADSL modem; and

generating a pseudo-random bit sequence based on the selected parameter data; whereby the pseudo-random bit sequence can be output to seed generation of a Medley signal in the ADSL modem.

15.   The method of claim 14, wherein said selected parameter data comprises at least one of a selected initial state or a selected polynomial.

16.   The method of claim 14, further comprising transmitting the selected parameter data to a receiver.

17.   A method, comprising:

generating an input periodic bit sequence; and

scrambling the input periodic bit sequence to obtain a pseudo-random bit sequence; whereby the pseudo-random bit sequence can be output to seed generation of a Medley signal in an ADSL modem.

18.   The method of claim 17, wherein said scrambling step scrambles the input periodic bit sequence to obtain the output pseudo-random bit sequence.